FCX Series A & C

Fuji/Barton Electronic Transmitters

- Compact
- Field Upgradeable
- HART Compatible
- Reduced Cost of Ownership
- Ideal for:
  - Oil/Gas
  - Food/Beverage
  - Chemical
  - Power
  - Water/Waste water
  - Industrial/Commercial Applications

A single silicon crystal etched to exacting standards is at the core of Fuji/Barton's latest generation of electronic transmitters. This micro capacitance sensor negates the effects of hysteresis and long term fatigue. Approved by various international regulatory agencies, the FCX A/C Series transmitters are intrinsically safe and explosion proof. From sealed sensing systems to high powered RTUs – for every application from natural gas to cryogenic liquids – the FCX measures, displays, alarms and outputs level, pressure and/or flow. Whether the requirement demands standard or high performance accuracy, the FCX provides years of trouble free service resulting in the ultimate control of both the process and long term maintenance costs.

- **FCX A Series**
  - Gauge, absolute, flanged level and differential pressures
  - Turndown up to 100 : 1
  - Performance to ± 0.07% of calibrated span
- **FCX C Series**
  - Gauge, absolute, and differential pressures
  - Turndown up to 16 : 1
  - Performance to ± 0.1% of calibrated span

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A closer look at the FCX Series A/C...

Micro Capacitance Silicon Sensor

The heart of the FCX transmitter is a Single Silicon crystal sensor etched to exacting standards. The silicon ensures high elasticity and virtually eliminates hysteresis in a transducer that exhibits one quarter the fatigue of equivalent metal sensors. The single wafer construction results in repeatability of the manufacturing process which translates into consistently accurate measurement performance. Large numbers of sensors are manufactured from a single sheet of silicon wafers ensuring high yields and reduced manufacturing costs for Barton – and – dramatically reduced long term drift and high product reliability for end users.

Advanced Floating Cell Design

Barton's unique advanced floating cell design incorporates an overrange protection diaphragm which isolates the sensor from adverse conditions present in normal process applications. Installed in the neck of the transmitter, the sensor is isolated from the effects of temperature extremes, mechanical vibration and overrange pressures.

ASIC Electronics Technology

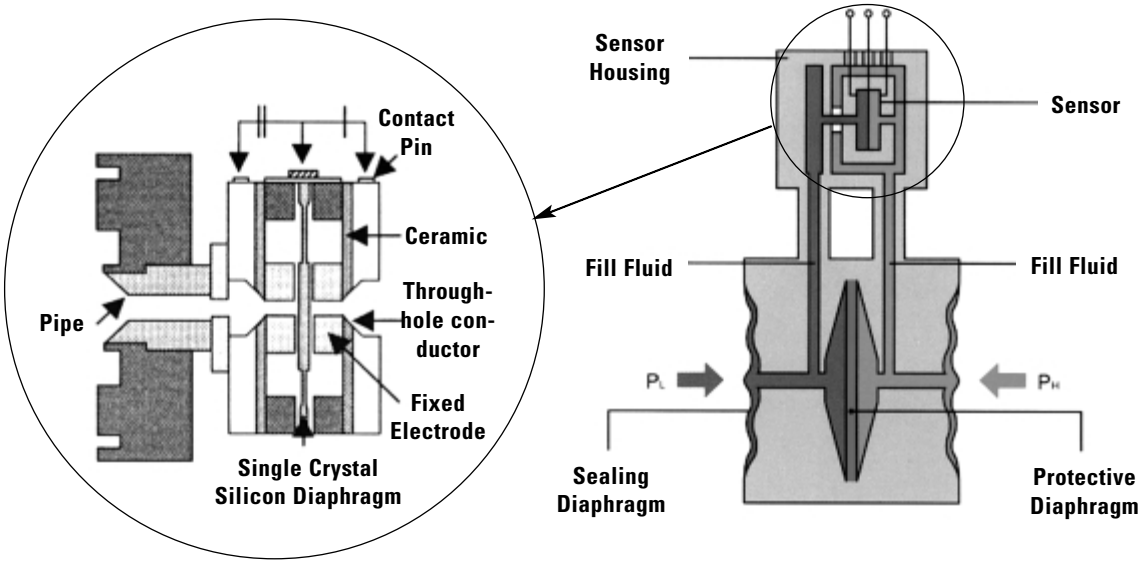
An 8 bit CMOS microprocessor, EEPROM memory, custom LSI's and surface mount technology ensure the performance, long term reliability and a package 60% smaller than any previous generation of Barton transmitter. The electronics unit is interchangeable over the entire range of FCX models.

Convertible and Bilingual

The FCX A and FCX C can be purchased as traditional analog 4-20 mA transmitters (featuring +/- 0.1% accuracy) but either model can easily be retrofitted with a 'snap in' communications module which converts it to a fully smart transmitter with digital communications. To provide the ultimate in flexibility, while reducing the total cost of ownership, all FCX smart transmitters are bilingual, communicating in HART as well as Barton's proprietary protocol.

Advanced Floating Cell Sensor

Fuji introduced its unique 'floating cell' measuring principle in the early 1980s. Since then, more than 500,000 units have been put to service in a broad base of industrial applications.



FCX Specifications

FCX A

The FCX A is a premium performance transmitter with a broad base of ranges, and materials of construction for wetted parts including 316 SS, Hastelloy C276, Monel 400, and Tantalum. Intrinsically safe and explosion proof, the FCX A can also be offered with a Hydroseal Diaphragm featuring excellent resistance to highly corrosive processes.

	Differential Pressure & Flow FHK / FHN / FKH			**Gauge Pressure** FHP / FKP			**Absolute Pressure** FHH / FKH			**Liquid Level** FHE / FKE		
Upper Range Limit	in. w.c. (psid)	mm w.c. (kPa)	mbar (bar)	psi	kPa (MPa)	bar	psi abs	kPa abs	bar abs	in. w.c. (psid)	kPa d	mbar d
Range: 1	4	100	10	9	64	0.64	2.32	16	0.16	125	3.2	320
2	24	610	60	72	500	5	19	130	1.3	250	6.4	640
3	125	3175	320	435	3000	30	72	500	5	520	13	1300
4	250	6350	640	1500	(10)	100	435	3000	30	(72)	50	5000
5	520	13200	1300	7000	(50)	500						
6	(72)	(500)	(5)									
7	(290)	(2000)	(20)									
8	(435)	(3000)	(30)									

Safe Working Pressure	psi	kPa	bar		psi	kPa	bar	
	450	3200	32		72	500	5	
	2000	14000	140	300% of URL	210	1500	15	Up to
	2300	16000	160		1300	9000	90	flange rating
	6000	42000	420					

Elevation/Suppression	-100% to +100% (zero plus span not to exceed URL)	
Turn Down (Min. Span)	**Analog:**	10 : 1 (1/10th of URL) (up to 10:1 turndown)
	Smart:	100 : 1 (1/100th of URL) (up to 10:1 turndown)
Accuracy	**Analog:**	+/- 0.1% calibrated span
	Smart:	+/- 0.1% calibrated span (+/- 0.075% available, digital mode only)
Sensor Temp Limit	–40° F to + 250° F (-40° C to + 120° C)	
Electronics Temp Limit	–40° F to + 185° F (-40° C to + 85° C)	
Wetted Metallic Parts	316 (L) Stainless Steel, Hastelloy C276, Monel 400, Tantalum	
Power Supply	11 – 45 VDC	
Output Signal	4 – 20 mA	
Comm./Protocol	Via FCX or HART Protocol Applicable to 'FK' series, or 'FH' series when communication module is added	
Enclosure	IEC IP67 and NEMA 4X	
Hazardous Locations	Intrinsically safe and flameproof (Explosion proof) per CSA, FM, BASEEFA, RIIS	
Options	Digital or analog indicator; lightning arrestor; stainless steel electronics housing; NACE specification; high temperature/high vacuum service; chlorine service; hydroseal diaphragm for corrosive service; tropicalization; material certification; process adapters	

FCX Specifications

FCX C

The FCX C Series transmitter was designed to exceed performance expectations of industrial process applications where economics is a key purchasing consideration. Offered with industry popular ranges and 316 stainless steel materials, the FCX C is also offered in both traditional and smart configurations.

	Differential Pressure & Flow FHK / FHN / FKH			**Gauge Pressure** FHP / FKP			**Absolute Pressure** FHH / FKH		
Upper Range Limit	in. w.c. (psid)	mm w.c. (kPad)	mbar (bar)	psi	kPa	bar	psi abs	kPa abs	bar abs
	*24	610	60	19	130	1.3	19	130	1.3
	125	3175	320	72	500	5	72	500	5
	520	13200	1300	435	3000	30	435	3000	30
	(72)	(500)	(5)	1500	10000	100			
	(290)	(2000)	(20)						
Safe Working Pressure	psi	kPa	bar				psi	kPa	bar
	*450	3200	32				72	500	5
	2000	14000	140	300% of URL			210	1500	15
							1300	9000	90

Elevation/suppression	-100% to +100% (zero plus span not to exceed URL)
Turn Down (Min. Span)	**Analog:** 10 : 1 (1/10th of URL) **Smart:** 16 : 1 (1/16th of URL)
Accuracy	+/- 0.1% of calibrated span (up to 10:1 turndown)
Sensor Temp Limit	–40° F to + 212° F (-40° C to + 100° C)
Electronics Temp Limit	–40° F to + 185° F (-40° C to + 85° C)
Wetted Metallic Parts	316 Stainless Steel, 316L Stainless Steel
Power Supply	11 – 45 VDC
Output Signal	4 – 20 mA
Comm./Protocol	Via FCX or HART Protocol Applicable to 'FK' series, or 'FH' series when communication module is added
Enclosure	IEC IP67 and NEMA 4X
Hazardous Locations	Intrinsically safe and flameproof (Explosion proof) per CSA, FM, BASEEFA, RIIS
Options	Digital or analog indicator; lightning arrestor; stainless steel electronics housing; NACE specification; degreasing; tropicalization; material certification; process adapters

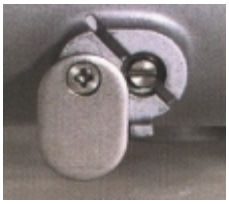
*Note: 450 psi SWP only applies to 24 inch w.c. URL.

For detailed information and specifications on specific FCX A/C Models, log on to our website at www.barton-instruments.com or contact any Barton Sales Office.

...a cost effective, reliable, and high performance transmitter.

Convenient Adjustments

Accessible mode switches provide control for damping, loop checks, direct/reverse action as well as the function of a unique external digital adjustment screw. When the mode switch is positioned to the zero or span control, the screw transmits pulses as it is rotated, instructing the microprocessor to increment/decrement the analog output by a finite, exacting amount. The dead spots and ultra-sensitivity associated with traditional potentiometer adjustments are eliminated – and no traditional transmitter is easier to calibrate.

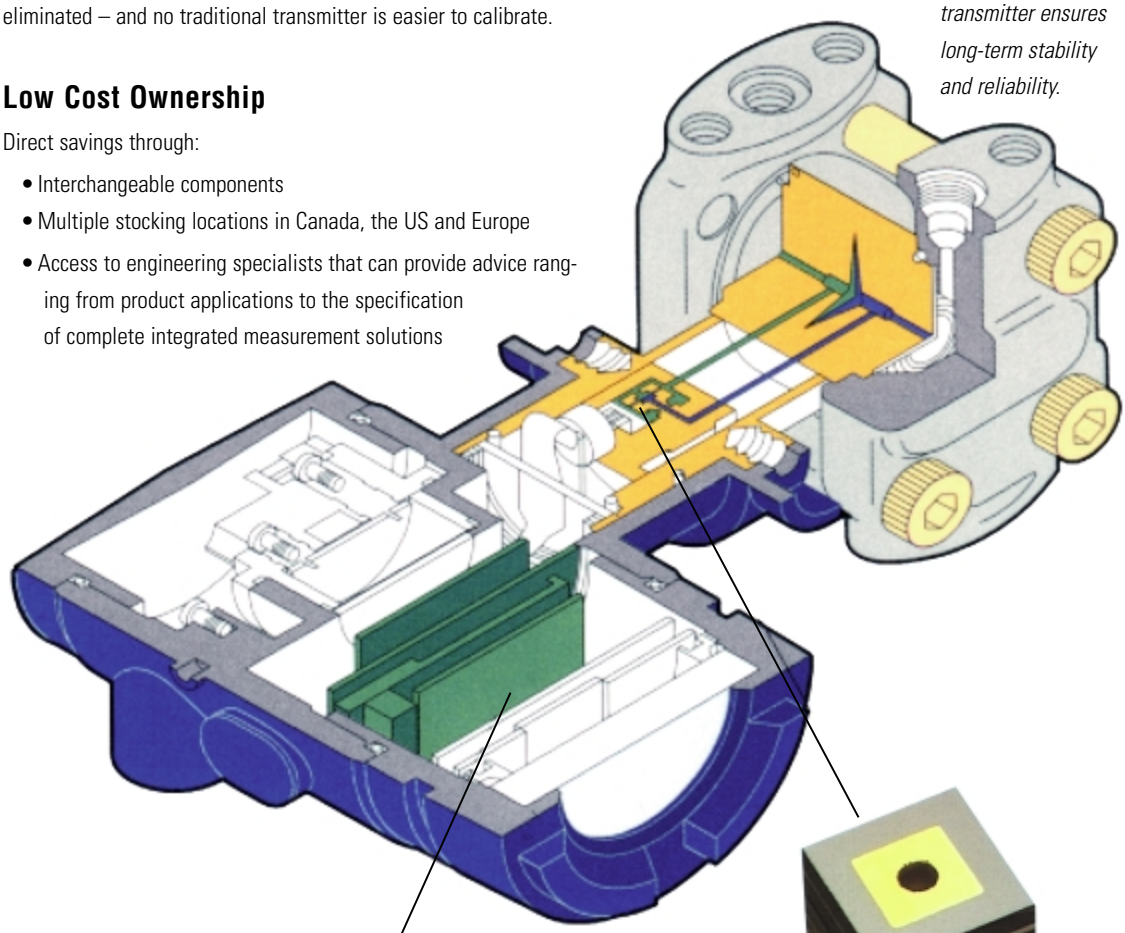


Manufactured in ISO 9001 recognized facilities, the FCX transmitter ensures long-term stability and reliability.

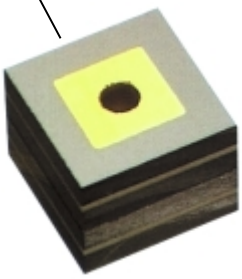
Low Cost Ownership

Direct savings through:

- Interchangeable components
- Multiple stocking locations in Canada, the US and Europe
- Access to engineering specialists that can provide advice ranging from product applications to the specification of complete integrated measurement solutions



Both the electronics unit and the sensor unit are fully interchangeable as individual configuration data is stored separately on the unit's EEPROM.



The Fuji microcapacitance silicon sensor is designed specifically to accommodate the shifts in electrostatic capacitance that result from varying input pressures.

These Barton products are represented in your area by:

Barton Instrument Systems designs, manufactures, sells and services precision instrumentation for the control and measurement of gas and fluid parameters including: pressure, level, flow, differential pressure, temperature and density. The technical and sales success of the FCX series of transmitters is the result of a long term strategic partnership between Barton and Fuji Electric. As the exclusive North American representative of Fuji transmitters, Barton is proud to represent this technically superior and cost competitive product line.

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